

Notice of Allowability

Application No.

09/889,585

Examiner

Paulos M. Natnael

Applicant(s)

MUTO ET AL.

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed August 9, 2004.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ The drawings filed on 18 October 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-16 are allowed.
2. The following is an examiner's statement of reasons for allowance: the prior art fails to disclose a video signal conversion device for converting an input video signal to a video signal suitable for a display device that carries out matrix display, comprising: a storage that stores said input video signal as data; a vertical frequency conversion processor that outputs a write control signal for writing said input video signal in said storage and a read control signal for reading the video signal stored in said storage to control input/output of the video signal in/from said storage while converting the vertical frequency of the video signal by use of data stored in said storage; an interlace-to-progressive conversion processor that converts, when the video signal output from said vertical frequency conversion processing circuit is an interlace signal, the video signal from the interlace signal to a progressive signal and outputs the progressive signal; a scanning line conversion processor that converts *the number of scanning lines of the video signal output from said interlace-to-progressive conversion processor*; a horizontal pixel conversion processor that converts the number of horizontal pixels of the video signal output from said scanning line conversion processor(*so that the horizontal pixel conversion processor is arranged at a succeeding stage, so that a lower sampling frequency is set in advance in analog to digital conversion to reduce the amount of data*

Art Unit: 2614

to be stored in the storage; a synchronous controller that outputs a synchronous control signal to said vertical frequency conversion processor, said interlace-to-progressive conversion processor, said scanning line conversion processor, and the horizontal pixel conversion processor; said synchronous control signal controlling operations of said vertical frequency conversion processor, said interlace-to-progressive conversion processor, said scanning line conversion processor, and said horizontal pixel conversion processor, wherein said input video signal is stored once in said storage to carry out vertical frequency conversion, interlace-to-progressive conversion, scanning line number conversion and horizontal pixel number conversion by use of the data stored in said storage, as in claim 1; and,

a video signal conversion method for converting an input video signal to a video signal suitable for a display device that carries out matrix display with a storage that stores the video signal as data, the method comprising: outputting a write control signal for writing the input video signal in the storage and a read control signal for reading the video signal stored in the storage and for controlling input/output of the video signal in/from said the storage while converting the vertical frequency of the video signal by use of data stored in the storage; converting, when the video signal converted in the vertical frequency conversion is an interlace signal, the video signal from the interlace signal to a progressive signal and to output the progressive signal; converting the number of scanning lines of the video signal converted in the interlace-to-progressive conversion; converting the number of horizontal pixels of the video signal converted in the scanning line conversion; generating a synchronous control signal to synchronize

Art Unit: 2614

the outputting and converting, and, wherein the input video signal is stored once in the storage to carry out vertical frequency conversion, interlace-to-progressive conversion. scanning line number conversion, and horizontal pixel number conversion by use of the data stored in the storage, as in claim 9.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

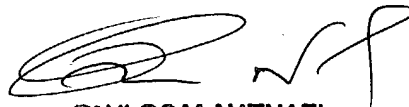
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2614

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PMN
November 16, 2004



PAULOS M. NATNAEL
PATENT EXAMINER